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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

PARTON, KEVIN S

ART UNIT	PAPER NUMBER
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2153

DATE MAILED: 06/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/026,488

Applicant(s)

WEINMAN, JOSEPH BERNARD

Examiner

Kevin Parton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/11</u> . | 6) <input type="checkbox"/> Other: ____. |

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DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because the phrase "The invention is" is unnecessary. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-5, 7, 8, 23, and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by Carter et al. (USPN 5,909,540).

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5. Regarding claim 1, Carter et al. (USPN 5,909,540) teach a system for managing at least one data object in a network comprising:

- a. A plurality of storage locations, each of said storage locations capable of storing a copy of the data object (column 7, lines 2-5).
- b. A data manager for creating a copy or moving a copy of said data object to one of said storage locations (column 5, lines 19-25).
- c. A counter for indicating a minimum number of storage locations in the network containing the data object (column 25, line 61 – column 26, line 15).
- d. Wherein the data manager maintains the data object at the minimum number of storage locations in the network based on the counter (column 25, line 61 – column 26, line 15).

6. Regarding claim 2, Carter et al. (USPN 5,909,540) teach all the limitations as applied to claim 1. They further teach means wherein each of said storage locations in the network possesses at least one attribute and is configured to determine a function based on said attribute (column 25, line 61 – column 26, line 15). Note that each location is a core location and the number of core locations is used in the storage of data.

7. Regarding claim 3, Carter et al. (USPN 5,909,540) teach all the limitations as applied to claim 2. They further teach means wherein the attribute comprises a geographic location (column 19, lines 21-36).

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8. Regarding claim 4, Carter et al. (USPN 5,909,540) teach all the limitations as applied to claim 2. They further teach means wherein the function comprises a distance between said storage locations in the network (column 25, line 61 – column 26, line 15; column 19, lines 21-36). Please note that given a physical location as well as a network address, physical as well as logical distance would be known.

9. Regarding claim 5, Carter et al. (USPN 5,909,540) teach all the limitations as applied to claim 1. They further teach means wherein each storage location comprises a computer memory (column 25, line 61 – column 26, line 15).

10. Regarding claim 7, Carter et al. (USPN 5,909,540) teach all the limitations as applied to claim 1. They further teach means wherein the data manager includes storage location information (column 25, line 61 – column 26, line 15).

11. Regarding claim 8, Carter et al. (USPN 5,909,540) teach all the limitations as applied to claim 7. They further teach means wherein the storage location information comprises at least one of a storage space data, size of data objects, last accessed time of data objects, number of accesses of data objects, or local geographic information (column 25, line 61 – column 26, line 15). Note that physical (or geographical) location is known.

12. Regarding claim 23, Carter et al. (USPN 5,909,540) teach a system for managing a data object in a network with means for:

- a. Determining a plurality of storage locations in a network containing the data object (column 7, lines 2-5; column 25, line 61 – column 26, line 15).

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- b. Deleting the data object at each determined storage location
(column 29, lines 23-31).

13. Regarding claim 30, Carter et al. (USPN 5,909,540) teach a server for maintaining information on data in network nodes comprising:

- a. A node table for storing node information (column 10, line 36 – column 11, line 21; column 19, lines 21-35).
- b. A node distance table for storing distance information between nodes (column 10, line 36 – column 11, line 21; column 19, lines 21-35).
- c. An object copy table for maintaining data copy information
(column 10, line 36 – column 11, line 21; column 19, lines 21-35; column 25, line 61 – column 26, line 15).
- d. An object data and rules table (column 10, line 36 – column 11, line 21; column 19, lines 21-35).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 6, 9-17, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carter et al. (USPN 5,909,540) in view of Wu et al. (USPN 6,823,377).

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16. Regarding claim 6, although the system disclosed by Carter et al. (USPN 5,909,540) (as applied to claim 1) shows substantial features of the claimed invention, it fails to disclose a data request component for receiving a data request from a site and for transferring the data object to a storage location within a predetermined distance of said site.

Nonetheless, these features are well known in the art and it would have been an obvious modification of the system disclosed by Carter et al. (USPN 5,909,540) as evidenced by Wu et al. (USPN 6,823,377).

In an analogous art, Wu et al. (USPN 6,823,377) discloses a system for distributed storage of data comprising a data request component for receiving a data request from a site and for transferring the data object to a storage location within a predetermined distance of said site (column 3, lines 50-57; column 7, lines 16-23).

Given the teaching of Wu et al. (USPN 6,823,377), a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Carter et al. (USPN 5,909,540) by forwarding a client request to a storage device within a predetermined distance from the client. This benefits the system by reducing latency as shown in the abstract of the reference to Wu et al. (USPN 6,823,377).

17. Regarding claim 9, Carter et al. (USPN 5,909,540) teach a system for managing a data object in a network with means for:

- a. Receiving the data object (column 5, lines 19-33; column 25, lines 61-64).

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- b. Determining a minimum distance between a plurality of storage locations in a network (column 19, lines 20-35). Note that physical location is known, so minimum distance would be known as well.
- c. Creating a plurality of copies of the data object (column 25, line 61 – column 26, line 15).
- d. Storing each copy of the plurality of copies of the data object at a selected storage location in the network.

Although the system disclosed by Carter et al. (USPN 5,909,540) shows substantial features of the claimed invention, it fails to disclose means for selecting at least one storage location based on the minimum distance.

Nonetheless, these features are well known in the art and it would have been an obvious modification of the system disclosed by Carter et al. (USPN 5,909,540) as evidenced by Wu et al. (USPN 6,823,377).

In an analogous art, Wu et al. (USPN 6,823,377) discloses a system for distributed data storage with means for selecting at least one storage location based on the minimum distance (column 3, lines 50-57; column 7, lines 16-23).

Given the teaching of Wu et al. (USPN 6,823,377), a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Carter et al. (USPN 5,909,540) by utilizing a minimum distance in the storage of data. This benefits the system by maintaining the data at sites that can more quickly respond to client requests.

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18. Regarding claim 10, Carter et al. (USPN 5,909,540) teach all the limitations as applied to claim 9. They further teach means wherein the plurality of copies comprises at least n copies of the data object, n being a desired minimum number of copies of the data object (column 25, line 61 – column 26, line 15).

19. Regarding claim 11, Carter et al. (USPN 5,909,540) teach all the limitations as applied to claim 9. They further teach means for determining n , n being a desired minimum number of copies of the data object; and forming at least $n-1$ copies of the data object (column 25, line 61 – column 26, line 15).

20. Regarding claim 12, Carter et al. (USPN 5,909,540) teach a system for managing a data object in a network with means for:

- a. Determining the number of a plurality of storage locations in the network each containing a copy of the data object (column 7, lines 2-5; column 25, line 61 – column 26, line 15).
- b. Obtaining a desired minimum number of copies of the data object (column 25, line 61 – column 26, line 15).
- c. Storing a copy of the data object at a selected storage location in the network if the actual number of copies of the data is less than the desired minimum number (column 25, line 61 – column 26, line 15).

Although the system disclosed by Carter et al. (USPN 5,909,540) shows substantial features of the claimed invention, it fails to disclose means wherein the selected storage location is separated by at least a distance d from at least

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one other storage locations in the network containing a copy of the data object, d being a predetermined minimum distance.

Nonetheless, these features are well known in the art and it would have been an obvious modification of the system disclosed by Carter et al. (USPN 5,909,540) as evidenced by Wu et al. (USPN 6,823,377).

In an analogous art, Wu et al. (USPN 6,823,377) discloses a system for distributed data storage wherein the selected storage location is separated by at least a distance d from at least one other storage locations in the network containing a copy of the data object, d being a predetermined minimum distance (column 3, lines 50-57; column 7, lines 16-23).

Given the teaching of Wu et al. (USPN 6,823,377), a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Carter et al. (USPN 5,909,540) by utilizing a minimum distance in the storage of data. This benefits the system by maintaining the data at sites that can more quickly respond to client requests and ensure that the data is evenly distributed geographically.

21. Regarding claims 13 and 16, although the system disclosed by Carter et al. (USPN 5,909,540) (as applied to claims 12 and 15, respectively) shows substantial features of the claimed invention, it fails to disclose means for calculating the predetermined minimum distance d .

Nonetheless, these features are well known in the art and it would have been an obvious modification of the system disclosed by Carter et al. (USPN 5,909,540) as evidenced by Wu et al. (USPN 6,823,377).

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In an analogous art, Wu et al. (USPN 6,823,377) discloses a system for the distributed storage of data with means for calculating the predetermined minimum distance d (column 3, lines 50-57; column 7, lines 16-23).

Given the teaching of Wu et al. (USPN 6,823,377), a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Carter et al. (USPN 5,909,540) by utilizing a minimum distance in the storage of data. This benefits the system by maintaining the data at sites that can more quickly respond to client requests and ensure that the data is evenly distributed geographically.

22. Regarding claims 14 and 17, Carter et al. (USPN 5,909,540) teach all the limitations as applied to claims 13 and 17, respectively. They further teach means for determining the geographic location of the storage location (column 19, lines 21-35).

23. Claim 15 is equivalent to claim 12 except that it further required the receipt of a modified data object and the replacement of previously stored data objects with the modified object.

This is well known in the art and would be an obvious modification to the system of Carter et al. (USPN 5,909,540).

A person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Carter et al. (USPN 5,909,540) by replacing previously stored data with newly modified data. This benefits the system by ensuring that the stored data is the most recent and up to date.

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24. Regarding claim 26, Carter et al. (USPN 5,909,540) teach a system for managing a data object in network with means for:

- a. Receiving a request to access a data object from a user site; generating a copy of the data object (column 5, lines 19-33; column 25, lines 61-64).
- b. Storing the generated copy of the data object at a storage location (column 25, line 61 – column 26, line 15).

Although the system disclosed by Carter et al. (USPN 5,909,540) shows substantial features of the claimed invention, it fails to disclose means wherein the storage location is within a predetermined distance from the user site.

Nonetheless, these features are well known in the art and it would have been an obvious modification of the system disclosed by Carter et al. (USPN 5,909,540) as evidenced by Wu et al. (USPN 6,823,377).

In an analogous art, Wu et al. (USPN 6,823,377) discloses a system for distributed data storage wherein the storage location is within a predetermined distance from the user site (column 3, lines 50-57; column 7, lines 16-23).

Given the teaching of Wu et al. (USPN 6,823,377), a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Carter et al. (USPN 5,909,540) by utilizing a predetermined distance in the storage of data. This benefits the system by maintaining the data at sites that can more quickly respond to client requests and ensure that the data is evenly distributed geographically.

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25. Claims 18-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carter et al. (USPN 5,909,540) in view of Kuroki et al. (USPN 5,960,176).

26. Regarding claim 18, Carter et al. (USPN 5,909,540) teach a system for managing a data object in a network with means for:

- a. Determining an actual number of a plurality of storage location in the network that each contain a copy of the data object (column 25, line 61 – column 26, line 15).
- b. Obtaining a number of copies of the data object (column 25, line 61 – column 26, line 15).

Although the system disclosed by Carter et al. (USPN 5,909,540) shows substantial features of the claimed invention, it fails to disclose a maximum number and deleting a copy of the data object from a storage location if the actual number of copies of the data is greater than the maximum number of copies of the data object.

Nonetheless, these features are well known in the art and it would have been an obvious modification of the system disclosed by Carter et al. (USPN 5,909,540) as evidenced by Kuroki et al. (USPN 5,960,176).

In an analogous art, Kuroki et al. (USPN 5,960,176) discloses a system for data storage with means for deleting a copy of the data object from a storage location if the actual number of copies of the data is greater than the maximum number of copies of the data object (column 6, lines 15-21).

Given the teaching of Kuroki et al. (USPN 5,960,176), a person having ordinary skill in the art would have readily recognized the desirability and

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advantages of modifying the system of Carter et al. (USPN 5,909,540) by deleting copies when the number of copies exceeds a maximum. This benefits the system by avoiding overload of the system memory with unneeded copies.

27. Regarding claim 19, although the system disclosed by Carter et al. (USPN 5,909,540) (as applied to claim 18) shows substantial features of the claimed invention, it fails to disclose means wherein the maximum number of copies of the data object is equal to $n+x$, n being a desired minimum number of copies of the data object and x being a maximum additional number of copies of the data object.

Nonetheless, these features are well known in the art and it would have been an obvious modification of the system disclosed by Carter et al. (USPN 5,909,540) as evidenced by Kuroki et al. (USPN 5,960,176).

In an analogous art, Kuroki et al. (USPN 5,960,176) discloses a system for data storage wherein the maximum number of copies of the data object is equal to $n+x$, n being a desired minimum number of copies of the data object and x being a maximum additional number of copies of the data object (column 6, lines 15-21).

Given the teaching of Kuroki et al. (USPN 5,960,176), a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Carter et al. (USPN 5,909,540) by deleting copies when the number of copies exceeds a maximum. This benefits the system by avoiding overload of the system memory with unneeded copies.

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28. Regarding claim 20, Carter et al. (USPN 5,909,540) teach all the limitations as applied to claim 18. They further teach means for:

- a. Determining an attribute of each storage location containing a copy of the data object (column 25, line 61 – column 26, line 15).
- b. Selecting the copy of the data object based on the attribute of the storage location containing the data object (column 25, line 61 – column 26, line 15).
- c. Deleting the selected copy of the data object (column 29, lines 23-31).

29. Regarding claim 21, Carter et al. (USPN 5,909,540) teach all the limitations as applied to claim 20. They further teach means wherein the attribute comprises at least one of storage space data, size of the stored data object, last accessed time of the data object, number of accesses of the data object, or local geographic information (column 19, lines 21-35).

30. Regarding claim 22, Carter et al. (USPN 5,909,540) teach all the limitations as applied to claim 18. They further teach means for determining the geographical location of the storage location (column 19, lines 21-35).

31. Claims 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carter et al. (USPN 5,909,540).

32. Regarding claim 24, although the system disclosed by Carter et al. (USPN 5,909,540) (as applied to claim 23) shows substantial features of the claimed

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invention, it fails to disclose means for broadcasting a deletion message to all storage locations via a multicast protocol.

Nonetheless, these features are well known in the art and it would have been an obvious modification of the system disclosed by Carter et al. (USPN 5,909,540).

A person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Carter et al. (USPN 5,909,540) by multicasting delete messages to all storage locations. This benefits the system by allowing all instances of an object to be deleted in the event that it is no longer available from its original provider.

33. Regarding claim 25, although the system disclosed by Carter et al. (USPN 5,909,540) (as applied to claim 24) shows substantial features of the claimed invention, it fails to disclose means wherein said multicast protocol is Protocol Independent Multicast-Sparse Mode (PIM-SM).

Nonetheless, these features are well known in the art and it would have been an obvious modification of the system disclosed by Carter et al. (USPN 5,909,540).

A person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Carter et al. (USPN 5,909,540) by utilizing PIM-SM for multicast. This is a protocol commonly used for sending these types of messages and would benefit the system by enabling the multicasting of deletion messages.

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34. Claims 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carter et al. (USPN 5,909,540) in view of Wu et al. (USPN 6,823,377) as applied to claim 26 above, and further in view of Kuroki et al. (USPN 5,960,176).

35. Regarding claim 27, Carter et al. (USPN 5,909,540) teach all the limitations as applied to claim 26. They further teach means for:

- a. Determining the number of a plurality of storage locations in the network containing a copy of the data object (column 7, lines 2-5).
- b. Obtaining a desired minimum number of copies of the data object (column 25, line 61 – column 26, line 15).
- c. Selecting a storage location in the network containing a copy of the data object (column 25, line 61 – column 26, line 15).
- d. Deleting the copy of the data object at the selected storage location (column 29, lines 23-31).

Although the system disclosed by Carter et al. (USPN 5,909,540) shows substantial features of the claimed invention, it fails to disclose means for deleting when the actual number of storage locations containing a copy of the data object is greater than the desired minimum number of copies.

Nonetheless, these features are well known in the art and it would have been an obvious modification of the system disclosed by Carter et al. (USPN 5,909,540) as evidenced by Kuroki et al. (USPN 5,960,176).

In an analogous art, Kuroki et al. (USPN 5,960,176) discloses a system for distributed data storage with means for deleting when the actual number of

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storage locations containing a copy of the data object is greater than the desired minimum number of copies (column 6, lines 15-21).

Given the teaching of Kuroki et al. (USPN 5,960,176), a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Carter et al. (USPN 5,909,540) by deleting copies when the number of copies exceeds a given number. This benefits the system by avoiding overload of the system memory with unneeded copies.

36. Regarding claim 28, Carter et al. (USPN 5,909,540) teach all the limitations as applied to claim 27. They further teach means wherein the selecting comprises determining an attribute of the storage locations containing a copy of the data object (column 19, lines 21-35).

37. Regarding claim 29, Carter et al. (USPN 5,909,540) teach all the limitations as applied to claim 28. They further teach means wherein the attribute comprises at least one of storage space data, size of the stored data object, last accessed time of the data object, number of accesses of the data object, or local geographic information (column 19, lines 21-35).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Parton whose telephone number is (571)272-3958. The examiner can normally be reached on M-F 8:00AM - 4:30PM.

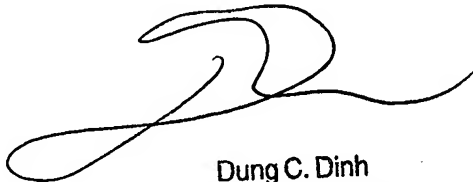
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton Burgess can be reached on (571)272-3949. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin Parton
Examiner
Art Unit 2153

ksp

A handwritten signature in black ink, appearing to read 'Dung C. Dinh', with a large, stylized loop at the end.

Dung C. Dinh
Primary Examiner